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WINGATE

SURVEY AND ASSESSMENT

KHANDESH

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SELECTIONS FROM THE RECORDS OF THE BOMBAY GOVERNMENT.
No. I.

REPORT BY CAPTAIN WINGATE,

REVENUE SURVEY COMMISSIONER,

ON THE

PLAN OF SURVEY AND ASSESSMENT

MOST SUITABLE TO THE PROVINCE OF

KHANDESH.

AND ALSO THE

INSTRUCTIONS ISSUED ON THE SUBJECT BY GOVERNMENT.

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Printed for the Information of the Revenue Officers under the Government of Bombay.

H. E. GOLDSMID,
Secretary to Government.

Revenue Secretary's Office,
19*th May* 1852.

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No. 97 of 1852.

From

Captain G. Wingate,

Survey Commissioner,

To

H. E. Goldsmid, Esquire,

Secretary to Government,

Bombay.

Sir,

I now do myself the honor to submit, for the consideration of Government, the opinions I have been led to form in regard to the most suitable plan of Survey for Khandesh, from information obtained during a recent tour in that Province, undertaken in compliance with instructions conveyed in the 16th para. of the Government Letter No. 10907, dated 20th November last.

2. In the course of my tour I had the advantage of consulting Mr. Elphinstone, the Collector, and nearly all his Mamlutdars, in regard to the condition of their Districts, and I have also been supplied with a mass of statistical information for each Talook. The information thus supplied, and the results of my own personal inquiries in eleven out of the sixteen Talooks composing the Province, enable me to propose the plan of Survey to be described in the sequel with a considerable degree of confidence.

3. The Collectorate of Kandesh contains sixteen Talooks, viz., Sowda, Yawul, Chopra, Thalneir, and Sooltanpoor, situated in the order I have named them from east to west, along the north bank of the Taptee River; Nusseerabad, Errundole, Amulneir, and Nundoorbar, occupying a similar position along the southern bank of the same river; and Jamneir, Burgaon, Chaleesgaon, Dhoolia, Malligaon, Pimpulneir, and Baglan, lying between the Taptee Talookas and the Chandore, or Adjunta range of hills, which divides Khandesh from the Deccan.

4. The fall of rain throughout Khandesh is probably less than in the Southern Mahratta Country, and little, if at all, greater than in the Deccan, while the rocks and the soils are exactly similar to those of the latter Province, though the harder varieties of trap are much more sparingly distributed in Khandesh than in the Deccan. Notwithstanding, however, these resemblances, the soil of Khandesh is more fertile, and yields heavier crops than that of either the Deccan or Southern Mahratta Country, which, apparently, is owing to some unexplained peculiarity of climate, and to the soil being less exhausted by long-continued cultivation.

5. This superior fertility, however, does not affect the relative fertility of the several varieties of soil amongst themselves. The principal crops of Khandesh are also those of the Deccan and Southern Mahratta Country, and the modes of husbandry do not materially differ, on which account the plan for estimating the relative values of different kinds of soil followed on the Surveys of those Provinces will be, in all respects, applicable to Khandesh.

6. Irrigation is more extensively practised in Khandesh than in the Deccan or Southern Mahratta Country. The vallies of Khandesh are all open and level, and the smaller rivers, taking their rise in the Western Ghauts, flow in shallow beds, which are every here and there obstructed by ledges of hard rock. These act as natural dams, and afford great facilities for the construction of bundharas, or masonry dams, for diverting the water of the river into canals for irrigation. Bundharas have, accordingly, been built in great numbers in these rivers, and more particularly in the Talooks of Baglan, Pimpulneir, Malligaon, and Dhoolia. A masonry wall of a few feet in height, built across the bed of the river at some place where there is a natural ledge of rocks, affords a sufficient head of water to admit of the stream being led off by a canal so as to rise above the level of the plain from two to three miles lower down. The flatness of the land, and its very gentle slope in the direction of the course of the river, adapts it admirably for irrigation, and in the case of all the bundharas I have seen there is a much greater extent of land admitting of being overflowed than the supply of water suffices to irrigate. All the Khandesh rivers flow into the Taptee, but the bundharas are chiefly found on the upper portions of their courses. The river beds become gradually deeper as they approach the Taptee, and so unfavourable for the construction of dams. The Taptee itself flows in a channel of extraordinary depth, depressed at least a hundred feet below the level of the plain through which it flows, and its waters are, therefore, not available for irrigation in any part of their passage through Khandesh.

7. Water is obtainable by digging almost everywhere in Khandesh, and wells at one time have been very numerous. The Taptee, however, acts as a drain to carry off the subsoil waters, and the wells gradually deepen as they approach that river, until their water can no longer be profitably used for irrigation. Accordingly, in the immediate neighbourhood of the Taptee, wells are rarely met with, and, even at distances of 8 to 10 miles from the river, they are 50 and 60 feet in depth in the Chopra Talook. Generally speaking, however, their depth is much less considerable, and at some future day, when the wants of an increasing population shall exceed the capabilities of the land to supply without the aid of irrigation, water will be obtainable in unlimited quantity by the digging of wells. The "Mothusthul," or well-irrigation, is even now considerable; but, excepting in the immediate neighbourhood of towns, where there is a demand for garden produce, I am inclined to think it the least remunerative husbandry in Khandesh.

8. The irrigated husbandry is, however, of quite subordinate importance to that of the dry crop. "Gool," or Coarse Sugar, and Opium, are the chief exports belonging to the former, whereas all the great exports of Khandesh—Cotton, Oil Seeds, Wheat, Gram, and, formerly, Indigo—belong to the latter, though Wheat and Gram are also grown to some extent on irrigated land.

9. The early or Monsoon crops are by far the most important in Khandesh, and to them belong all the dry crop exports I have named, except Wheat, Gram, and Linseed. Formerly, the late or Rubbee crops used to be much more extensively grown than is now the case, but Wheat and Gram have been displaced to a great extent by Cotton, owing to the comparatively large demand for the latter crop of late years.

10. The extent of cultivation in Khandesh, compared with its area, is very limited. On entering the Province from almost any quarter, the face of the country appears to be covered with low scattered bush-jungle. This jungle is composed of various kinds of thorny bushes, of which the "Bear," with its recurved thorns, is the most abundant. These bushes are seldom more than 10 feet in height, and usually much less. They do not generally grow very close together, but here and there dense and almost impervious thickets are met with.

11. On viewing the country around from any little elevation, it is difficult to make out

where the cultivation is situated, as the sombre monotonous jungle meets the eye in every direction. This is accounted for by the fields being frequently surrounded by strips of waste covered with jungle, and by the cultivated fields themselves being often half covered with bear-thorn bushes. When a field is prepared for cultivation in Khandesh, the bushes covering the surface are not rooted out, but are merely cut down to the ground, and the plough is driven among the stumps, as in an American clearing. The vitality of the bush seems to be little affected by the operation—it begins to sprout again with the growing crop, and in six months' time seems almost as large and as vigorous as before it was cut down ; and after the crop is cut, the field wears the look of being covered with jungle much as before. When the field is next prepared for sowing, the bushes are again cut down, and again spring up, and so the alternation goes on. In time, no doubt, the bushes would be destroyed by this constant pruning, but in consequence of the great abundance of arable land in Khandesh, the same land is not usually cropped for more than three or four years in succession. It is then thrown up, as the soil begins to yield a diminished return, and a piece of fresh waste is taken instead. The fields thus thrown up are allowed to be fallow for several years before they are again taken into cultivation.

12. This mode of husbandry does not eradicate the bush-jungle, and, in a year or two after a field so cultivated is relinquished, the jungle has grown up as thickly as ever, and there is nothing to indicate that the field has ever been under tillage at all. It is only immediately around the villages, in thinly peopled parts, that the fields are in continuous cultivation, as there the facilities for manuring and bringing home the crops make such lands more valuable than those at a greater distance, even with the advantage of the greater productive capabilities of the soil occasioned by long fallows. Generally, then, throughout Khandesh, with an exception to be described presently, there is a limited space tolerably cleared around each inhabited village, and all the rest of the country, whether cultivated or waste, is more or less overrun with low bush-jungle, which would form a serious hindrance to detailed Survey operations.

13. The exception to which I have alluded is the upper part of the fine rich plain of the Taptee, which, for some miles on both sides of the river in the Talooks of Sowda, Yawul, part of Chopra, Nusseerabad, Errundole, and part of Amulneir, is cleared of jungle, and, for the most part, under cultivation. This is the best-peopled and richest portion of, and, I may say, the only part of, the Collectorate that looks like an old country. All the rest has more the aspect of a newly-peopled colony, if we except the traces of a former industry to be seen in the mango and tamarind trees, and the many ruined wells which are still to be met with in the neighbourhood of almost every village.

14. Excepting, then, the well-cultivated portion of the Taptee plain above referred to, the whole of Khandesh may be viewed as only very partially reclaimed from a state of nature. The present population is wholly inadequate to occupy it fully, and there is no prospect I should say, of the population becoming sufficient for this purpose for the next century to come. To make this evident, it will be necessary to refer more particularly to the present population and cultivation of the several Talooks of the Collectorate.

15. The data for the following Table have been obtained from returns furnished to me by the Collector, with the exception of the square miles in each Talook, which were obtained from the Civil Engineer, Lieutenant Bell, who informed me that they were carefully calculated from the areas of the several Talooks, according to boundaries laid down in the lithographed map of the Collectorate, from returns of the villages lying along the Talook boundaries supplied by the Mamlutdars, and that he believed them to be very nearly correct. The square miles, it will be understood, include the area of hills, rivers, roads, sites of villages, and all other kinds of unarable in addition to the arable surface :—

Talooks.	Number of Villages in each Talook.			Population of each Talook, according to Census of 1851.	Number of Square Miles in each Talook.	Number of Inhabitants to each Square Mile.	Cultivation in the Year 1850.		Per Head of Population.	
	Inhabited.	Uninhabited.	Total.				Beeghas.	Assessment after deducting remittances.	Beeghas in cultivation.	Assessment, Rupees
1. Sowda.....	98	38	136	59438	338	176	93796	187017	1·57	3·14
2. Yawul	55	28	83	32394	280	116	57027	88542	1·76	2·73
3. Chopra.....	98	104	202	33975	544	62	39208	76713	1·15	2·25
4. Thalneir	76	168	244	21026	898	23	30433	50189	1·44	2·38
5. Sooltanpoor ..	327	124	451	36295	1312	28	71526	136282	1·97	3·75
6. Nusseerabad..	88	37	125	40290	288	140	86976	137167	2·15	3·04
7. Errundole....	177	56	233	53592	336	160	96349	126783	1·79	2·36
8. Amulneir	186	66	252	48032	530	91	96429	132194	0·02	2·75
9. Nundoorbar ..	232	84	316	53312	1118	48	89749	143526	1·68	2·69
10. Jamneir	183	50	233	73381	568	129	140321	120433	1·91	1·64
11. Burgaon	275	73	348	84044	822	102	144519	129382	1·71	1·53
12. Chaleesgaon ..	119	30	149	37110	608	61	49629	35259	1·33	0·95
13. Dhoolia	159	66	225	59497	970	61	100346	82001	1·68	1·37
14. Malligaon	190	14	204	60062	1120	54	115878	77963	1·92	1·29
15. Pimpulneir ..	211	128	339	33616	1270	26	44639	74775	1·32	2·22
16. Baglan	284	13	297	39026	1076	55	99984	106167	1·69	1·79
Whole Province of Khandesh..	2758	1079	3837	785091	12078	65	1356681	1704392	1·72	2·17

16. The actual area under cultivation in Khandesh is rather more than the beegha recorded in this table, as no allowance has been made for the extent of cultivation in certain of the wildest parts of the Collectorate, where the Revenue is collected by means of a plough-tax, and no record of the cultivation is made at all. A similar omission has been made in the case of alienated villages, but these are few in Khandesh, and the deficiency in the cultivated area shown in the table due to both causes is not considerable.

17. The beeghas given in the table are all of the same size, and were obtained from the measurement of cultivation made for the purpose of settling the Jummabundee of 1850-51. The beegha contains 3600 square yards, and is, therefore, almost exactly three-fourths of an acre. The beegha measurement in Khandesh was never extended beyond the cultivation of each year, and, therefore, affords no data for ascertaining the extent of arable waste. When land, once measured as cultivated, falls waste, it is recorded thereafter as cultivable waste, but great doubt attaches to the area so recorded from the want of any permanent boundaries to the fields, and the confusion of numbers in many instances. There is besides a large extent of arable land—probably upwards of one-half of the whole—which has never been under cultivation since we obtained the country, and is, consequently, not recorded at all.

18. In preparing the following Table, which shows the extent of land in square miles, I have taken the beegha at three-fourths of an acre, and roughly guessed at the extent of unarable surface in each Talook, which I have deducted from the whole area to find the arable surface. The latter, of course, can only be viewed as a rough approximation to the truth, but still an approximation, even though not a close one, will give a general idea of the relative extent of arable, cultivated, and waste land:—

Name of Talook.	Total Square Miles in each Talook.	Deduct estimated extent of unarable hills, rivers, roads, sides of villages, &c. Square Miles	Remaining arable, Square Miles	Of which are			
				Cultivated,		Waste,	
				Square Miles	Per cent.	Square Miles	Per cent.
1	2	3	4	5	6	7	8
1. Sowda	338	63	275	98	36	177	64
2. Yawul	280	40	240	60	25	180	75
3. Chopra	544	118	426	41	10	385	90
4. Thalneir	898	272	626	32	5	594	95
5. Sooltanpoor	1312	320	992	75	7	917	93
6. Nusseerabad	288	20	268	90	34	177	66
7. Errundole	336	24	312	100	32	212	68
8. Amulneir	530	45	485	100	21	385	79
9. Nundoorbar	1118	112	1006	94	9	912	91
10. Jamneir	568	40	528	146	28	382	72
11. Burgaon	822	70	752	151	20	601	80
12. Chaleesgaon	608	114	494	52	11	442	89
13. Dhoolia	970	181	789	105	13	684	87
14. Malligaon	1120	210	910	120	13	789	87
15. Pimpulneir	1270	348	922	47	5	875	95
16. Baglan	1076	326	750	104	14	646	86
Whole Collectorate	12078	2306	9772	1413	14	8359	86

19. It appears, then, from the sixth column of the table, that the cultivated area throughout the Collectorate is only 14 per cent. of the whole arable area, while, in particular Talooks, it is even more limited. In Chopra the land under cultivation is 10 per cent., in Nundoorbar, 9 per cent., in Sooltanpoor, 7 per cent., and in Thalneir and Pimpulneir, only 5 per cent. of the arable area.

20. Again, the great extent of waste, compared with cultivation, will be even more remarkable, if we pursue the investigation into sub-divisions of a Talook and particular villages. The Talook of Sowda, as a whole, is the most densely peopled in the Collectorate, but, notwithstanding that, it contains thirty-eight uninhabited, of which four are wholly uncultivated, exclusive of a deserted tract about to be described.

21. In this Talook, north of the Mahalkurry's station of Ranere, is a fertile valley within the Sautpoora Hills, which once contained a Cusba Town, called Pal, and numerous villages besides. These villages still exist in name, and the whole circle is called the Pal Tuppa, from the chief town of Pal. But the valley does not now contain, I was told, a single permanent resident, and not an acre of the soil is cultivated. It is thickly overgrown with jungle, and infested by wild beasts. It is seldom visited, except by Bheels and Brinjarries, who go there to cut wood and graze their cattle at particular seasons. In the neighbourhood of the sites of the old villages, mango and tamarind trees still flourish, and, along with numerous wells, attest that at no very distant date, and probably within the last century, the valley was crowded with industrious husbandmen. The soil is described as most excellent, and some years ago an attempt was made, with the aid of considerable grants of Tuccavee from Government, to repeople the valley. A number of settlers went there, who cut down the jungle, and ploughed and sowed a considerable extent of land. But the climate proved deadly in the extreme. The cultivators died, or lost their health irrecoverably, from frequent attacks of jungle fever. The wild animals, especially the hog and neelgaee, which abound in the valley, ate down and destroyed the crops. After the lapse of a year or two a miserable emaciated remnant of the original settlers left the valley in despair, and never returned. Such was the story of the Pal Tuppa as told to me, and I mention it thus in detail to illustrate the present state of the Province.

22. The Pal Tuppa is an example of a once-fertile and well-peopled and, doubtless, healthy tract of country having become covered with jungle and most malarious, owing to the destruction of the population during the anarchical times that preceded our conquest. It is by no means, however, the sole instance. The whole Ambeh Division of the Thalneir Talook is nearly in the same condition. The only inhabitants are a few Bheels, who subsist chiefly by wood-cutting, and pay a plough-tax to Government for the few lands they cultivate. A division of the Chopra Talook, called the Dowla Turph, is in the same condition. Large tracts of Sultanpoor, and the Nuwapoor Mahalkurries Division, as well as other parts of the Pimpulneir Talook, are in the same state. The climate of all these parts is reported to be most unhealthy. The native inhabitants suffer annually from fever and ague, and from enlargened spleen. To those who are not natives the climate is still more deleterious, and it would be almost certain death to a European to remain for any considerable time in the jungles between September and February. They become less unhealthy as the hot season advances, but are never quite safe for Europeans, or even for Natives unaccustomed to the climate. These tracts are, of course, very thinly peopled. The inhabitants are chiefly Bheels, who pay a light plough-tax, and cultivate as much land as they please. The annual bhegotee measurement has never been carried into these dreary wastes.

23. Again, even in the comparatively well-peopled and healthy districts of the plain, large tracts of waste, extending for miles, sometimes without an intervening patch of cultivation, are to be met with. From the table following my 15th paragraph it will be seen that there is a considerable number of uninhabited villages in all the Talooks, and a large number of these are also wholly uncultivated. But there is a still larger number of villages with only a very small population. Out of the 2758 inhabited villages of the Collectorate, there are 587 with less than 50 inhabitants, and of these 181 have less than 20 inhabitants. In every such case the whole cultivation is confined to a few fields, and, with this insignificant exception, the entire area of the village is waste, and covered with jungle.

24. To sum up these descriptions, we have, then, in Khandesh—

1st, Large continuous tracts of jungle in the Talooks north of the Taptee, towards the Sautpoora Range, and also in the western Talooks south of the Taptee, among the hills bordering the Dangs, which have a most unhealthy climate, and are either uninhabited, or contain a spare population, chiefly of Bheels, who have not yet learned habits of steady industry, and to whose limited cultivation the bhegotee system of Revenue management has not yet been extended.

2nd, Large tracts are to be met with, even in the plain, with very little cultivation, and with a very scanty population, uninhabited villages being numerous.

3rd, In all parts of the Collectorate, excepting a limited portion of the eastern Talooks adjoining the Taptee, waste land, covered with thorn-jungle, far exceeds in extent the cultivated area, and villages with very few inhabitants, or entirely deserted, are common.

25. The spaces described under the first of the preceding heads are similar to those referred to in the 8th paragraph of my Report No. 408, dated 5th November 1851. I therein expressed a doubt* as to the expediency of prosecuting the Survey in such localities at all, and I now feel satisfied that it would, in every point of view, be inexpedient to do so. It could serve no useful purpose, that I am aware of, to divide even into villages extensive tracts of jungle which afford no promise of becoming populated for many years to come. The few Bheel inhabitants could afford little, if any, aid to the work, and it would be necessary to

* "In such parts I am doubtful as to the expediency of prosecuting the Survey at all, as probably the ancient limits of the villages are unknown, and any attempt to survey them would prove at once tedious and expensive. It would be better, in my opinion, merely to survey the external limits of such tracts, in order to exhibit them on the Talook maps, and to defer their subdivision into villages and fields until population and cultivation have sufficiently extended to call for this to be done."

entertain a corps of labourers to cut through the jungle, where necessary ; for the Survey boundary marks, to indicate the village limits, would be of little use, and it would be impossible to repair them after they were once made. The Survey could only be carried on during a few months of the hot season, on account of the unhealthiness of the climate at other times, and it would necessarily be very expensive.

26. The external limits of such tracts are already indicated on the lithographed map of the Collectorate with sufficient correctness for all purposes connected with Revenue or Police administration, and I am now of opinion that it would be better not to undertake even the Survey of their external limits for the purpose of exhibiting them on the Talook maps, as suggested in my Report above quoted. I think such tracts should be left wholly untouched, and that the Survey should be confined to such parts as would be benefitted by its prosecution. At all events, it would be time enough to discuss the question further when the Survey operations in the more open parts of the Collectorate have made some advance.

27. The principal tracts proposed to be thus totally excluded from the operations of the Survey are the following :—

1st, The Pal Tuppa, of the Sowda Talook.

2nd, The Dowlee Turph, of the Chopra Talook, in part if not altogether.

3rd, The whole of the Ambeh Pergunna, consisting of 119 villages, and some of the hill villages of the Thalneir Pergunna, of the Thalneir Talook.

4th, Turph "Dongrugaon" or "Akranee," consisting of 159 villages, and some hill villages in the Turph Havellie, of the Sooltanpoor Talook.

5th, The Nowapoor Mahalkurry's Division, containing 70 villages, and Pergunna Warsee, containing 17 villages, of the Pimpulneir Talook.

6th, The Autbundee Villages, in the Jairapoor, Karobee, Hatgurh, and Pimple Pergunnas, of Talook Baglan.

28. In addition to these, there are, doubtless, smaller uncultivated tracts and deserted villages among the hills, which it would also be desirable to avoid surveying, but these the Superintendent of Survey will be able to discover in the course of his operations in the Talooks in which they are situated.

29. For the remaining parts of the Collectorate described under the 2nd and 3rd heads above alluded to, a field Survey of the whole arable land, according to the plan followed in the Deccan and Southern Mahratta Country Surveys, would be impracticable of execution, and, in a great measure, useless if accomplished. Generally, in Khandesh, it would be quite impossible to collect labourers enough for the construction of the vast number of boundary marks that would be necessary were the entire waste divided into fields : and even if the boundary marks could be constructed, they could not be kept in repair afterwards, and the whole labour would soon be lost.

30. In the 16th paragraph of my Report already quoted, I gave it as my opinion that the plan of Survey enjoined by the Joint Report would be, in all respects, suitable to the open parts of the Collectorate, but these are far less extensive than I had supposed, and there is not a single Talook in Khandesh to which the plan in question would be applicable in the case of every village without exception. This will be readily understood on referring to the table following my 18th paragraph, which shows the extent of cultivated and uncultivated arable land in the several Talooks. In the best cultivated Talook of all Nusseerabad the waste exceeds the cultivation in the proportion of two to one. In all the others it is considerably more. The extent of waste varies from 34 per cent. of the arable area in Nusseerabad to 95 per cent. in Thalneir and Pimpulneir, the average extent of the waste in all the sixteen Talooks being no less than 86 per cent. of the arable surface.

31. To admit, then, of the Survey operations being prosecuted with any tolerable degree of expedition, and without entailing useless expense in the construction of boundary marks, in the first instance, and their repair afterwards, it seems absolutely requisite that the division of the land into fields should be limited with reference to the present cultivation of each village, and not with reference to the cultivation of the Talook, or any larger division of it than a village. By this arrangement alone should we be able to obtain labourers in sufficient numbers for the prosecution of the Survey operations. By expanding and contracting the latter, in proportion to the cultivation of each village, which depends upon the population residing in the village itself, or in adjoining villages, the Survey Officers will, in most cases, be able to carry on their work with the aid of villagers, as they have been accustomed to do in the Deccan.

32. The mode of Survey I propose for adoption is the following :—

1st, To divide into fields, and survey, as required by the Joint Report, so much of the land around each village as may be now cultivated, and also from one-half to twice as much more of the better kinds of soil from the adjoining waste, unless the jungle be so dense as to make a detailed Survey of the latter very difficult. The lands to be so divided into fields to be generally contiguous to each other, and small patches of cultivation at a distance from the village, and separated by intervening jungle from the rest of the cultivation, to be left unsurveyed ; but this exception is not intended to apply to considerable tracts of cultivation separated from the rest, which should be divided into fields, though not contiguous to the cultivation around the village. The Superintendent of Survey to be empowered to increase or diminish the proportion of waste to be divided into fields, with reference to the difficulties or facilities experienced in prosecuting the Survey, or at the expressed desire of the villagers, should there be good grounds for so doing.

2nd, The external limits of the lands of each village to be fixed on the ground by boundary marks at all the great angles, and their position to be determined by means of a circuit Survey of the village boundaries, executed by means of the Theodolite, or Surveying Compass, or by measured triangulation, as may be found most convenient. The village boundaries, and the principal roads passing through the undivided portion of the village area, to be shown upon the map. The area of the undivided portion to be obtained by calculation from the map.

3rd, No field Survey to be made at all in the case of the villages at present wholly waste and uncultivated, but the boundary Survey of the village limits to be made as in other villages, and the area of the village lands obtained therefrom.

4th, The classification and assessment of the portion of the area divided into fields to be the same as on the other Surveys.

5th, The soil of the undivided portion of the village area not to be classified at all, but to be assumed to be equal in quality to the average of the classified fields, unless it be very much inferior in quality, when the Superintendent might cause the proper classification-rate to be estimated by a cursory examination of the ground.

6th, The classification-rate for waste villages, of which no portion is divided into fields, to be the same as that of the undivided portion of any adjoining or neighbouring villages supposed to resemble it most nearly in soil.

7th, A rate of Assessment to be imposed on the undivided land, with reference to the classification-rate found as above mentioned, in the same way as the rate of Assessment for any field.

33. This plan of Survey does not differ widely from that followed in the more thinly-peopled and jungly parts of the Southern Mahratta Country, where large tracts, covered with jungle, have been measured entire, without being divided into fields, and have neither

been classified nor assessed. I contemplate exactly the same plan of operations for Khandesh, and suggested in my former Report that, as population increases, portions of these jungles (or undivided portions of the village area) might be given, on application, to any parties desiring to cultivate them, under the provisions of Rule XIII. of the Joint Report. This Rule, however, requires an examination of the soil to be made, and a rate of Assessment to be fixed on it by the Mamlutdar, equivalent to that of similar soils in the same village. But the results of my inquiries in Khandesh have led me to give a preference to the plan embodied in the preceding rules for fixing one uniform rate of Assessment on the undivided portion of the land of each village in the course of the Survey.

34. My reasons for this recommendation are, that instead of the undivided lands being confined to a few villages, as in the Southern Mahratta Country, they will be found in almost every village in Khandesh, and, as cultivation will probably be prosecuted extensively in them under the Survey settlement, the difficulty of giving effect to the provisions of the rule in each case would be great, while the rule itself, being intended for a few exceptional cases, does not seem suitable to the lands in question, which will comprise four-fifths of the arable area of Khandesh. Another strong objection to the rule is, that it would interfere with the extension of cultivation, owing to the Assessment of the land to be brought into cultivation not being known beforehand. It would leave the fixing of the rate of Assessment for four-fifths of the whole arable land of Khandesh in the hands of the District and Village Officers, and so encourage jobbery and corruption in connection with the giving out of waste land for cultivation.

35. When fresh land, upon which no rate is fixed, is now taken into cultivation, some one of the rates existing in the village is usually placed upon it. Often, as I was told, the cultivator is induced to take up land by the Village Officers assuring him that the lowest rate would be placed upon it, but when the matter comes to be settled by the Mamlutdar upon the Report of the Carkoon, who prepares the Cultivation Return, the highest, instead of the lowest rate may be fixed upon. And even when the cultivator succeeds in getting the low rate, the *douceurs* likely to be demanded by the Puhanee Carkoon and Village Officers probably leave him little better off than if the higher rate had been imposed. In order to put an end to this jobbing, I was again and again asked by cultivators to assess all the lands of their villages, whether good or bad, at one and the same rate. They would then, they said, know exactly how they stood, and be able to take up waste without hesitation, which they never could do as matters are now managed.

36. In regard, then, to the portion of the village lands not divided into fields at the Survey, I propose to act upon this advice, and to have a single rate for the whole in each village. But to promote a convenient division of this waste into fields, and prevent the necessity of extensive annual measurements under the new settlement, I would recommend that never less than fifteen acres of dry crop land should be given for cultivation out of the undivided waste, and that if any one cultivates a less quantity he should be charged for fifteen acres. Any Ryut wishing to cultivate a part of the undivided waste might be required to present a written application to the Village Officers, who should immediately measure off a field, with straight sides, unless any side be a nulla, road, hill, or other natural limit, so as to include the ground desired by the applicant, who should then be informed of the number of acres the field contains, and what Assessment will be payable on it at the uniform rate per acre of the undivided land. Should the applicant then agree to cultivate the field, he should be made to construct earthen mounds at the four corners, and be cautioned to confine his cultivation within the limits so fixed. Afterwards, at the Pahanee, or inspection of waste and cultivated land, care should be taken to see that he has complied with these conditions, and that the boundary marks at the corners of the field are in proper repair.

37. A field once allotted in this way should always continue to be recorded as a separate "Path," or subsidiary number within the undivided waste; and in event of the field afterwards becoming waste, any one wishing to cultivate it again should be obliged to engage for

the whole field, with a view to keep its limits entire. A register should be kept of all the fields thus given for cultivation out of the undivided waste, containing a description of their boundaries, such as is given in the present "jereef khurda," or record of the annual field measurement. But the acres of each field would not vary annually according to the cultivation, as the beeghas of the "jereef khurda" do, as they, and also the Assessment, would be fixed once for all, when the field is first divided off. The fields taken for cultivation out of waste would be paid for as entire fields of an unvarying area, like those divided and assessed separately at the Survey, and consequently would require annual measurement, but in other respects the mode of managing the undivided waste would not differ much from that now followed in Khandesh.

38. The plan of Survey here recommended possesses, I think, the following advantages:— It excludes from its operations all those parts of the Collectorate which are not yet in a sufficiently advanced state to call for a revision of the existing Revenue system; it limits the operations in other places to such as are attainable without extreme difficulty, and are likely to prove useful; it would prove capable of more rapid execution, and less expensive than the more detailed Surveys of the Deccan and Southern Mahratta Country, and so secure for the highly-improvable Province of Khandesh a speedy revision of Assessment, which is greatly needed; it provides facilities for an extension of cultivation and division of land to any extent, in addition to the fields to be surveyed in detail in the course of the Survey.

39. The standard for recording the areas, determined by the Survey, should, of course, be the acre which has been adopted in all the surveyed Collectorates.

40. I have still a few suggestions to offer in regard to the mode of prosecuting the Survey, the Districts to be first taken in hand, and the most eligible locality for the Survey Head Quarters.

41. The climate of the westerly Talooks, Baglan, Pimpulneir, Nundoorbar, and Sooltanpoor, was described to me to be so feverish during the first two or three months after the monsoon as to make Survey operations there during these months highly inexpedient. The fevers prevailing from September till January are often of a malignant character, and are always difficult to shake off, so that a native establishment would inevitably be much crippled by sickness, and the Survey arrangements for the season seriously interfered with, if it were set to work in any of the Talooks I have named before the 1st of February. These remarks apply, likewise, though not so forcibly, to the Talooks of Malligaon, Dhoolia, and Thalneir, which are also more or less malarious after the monsoon. The other Talooks, Sowda, Yawul, Chopra, Nusseerabad, Errundole, Amulneir, Jamneir, Burgaon, and Chalisgaon, are tolerably healthy at all seasons, but the heat, especially in the Talooks north of the Taptee, which are immediately under the Sautpoora Mountains, is extreme from March till July, and would probably injuriously affect the health of European Officers exposed at that season in tents, if it did not incapacitate the Native Surveyors from prosecuting their work in the field as usual.

42. These peculiarities of climate will, I think, require the Superintendent of Survey, as suggested in the 15th paragraph of my Report already quoted, to carry on his operations in the healthy Talooks of the plain, from the opening of the fair season till the end of February or middle of March, and then to move his establishments into the western Talooks, where the Survey might safely be carried on till the beginning of July, or until operations are stopped by rain. Some little time will be lost in moving, &c., but the additional expense thus occasioned would be trifling, compared with what would result from the disorganization of the Survey Department by sickness.

43. In regard to the most suitable locality for the Survey Head Quarters, I think the choice is restricted to the stations where medical attendance is procurable, viz. Dhoolia, Malligaon, and Dhurrumgaon, the Head Quarters of the Bheel Corps. As regards position, all these places are sufficiently central: Dhoolia possess the further advantage of being the

Head Quarters of the Civil Establishments, but is objectionable on account of its hot and relaxing climate during the monsoon ; Dhurrumgaon is also liable to this objection, and contains no unoccupied houses. Malligaon has, I am informed, a bracing and agreeable climate to the European constitution during the monsoon months, and on this account I am inclined to recommend its selection for the Survey Head Quarters rather than Dhoolia; Dhurrumgaon appears to me less suitable than either. The successful prosecution of a Revenue Survey depends greatly on the health of the European Officers; when they become incapacitated by sickness for active exertion and exposure, their control over their subordinates becomes less efficient, and the discipline of the Department inevitably becomes relaxed. It is, then, of great importance to preserve the health of the European Officers by all available means, and a long experience satisfies me that nothing more conduces to this end than a cool and agreeable climate for a residence during the monsoon, by which the physical powers, relaxed and enfeebled by the exposure of the previous months, may be renovated and strengthened for the work of the succeeding season.

44. For these reasons I would recommend Malligaon for the Survey Head Quarters in preference to any other locality in Khandesh. It would be desirable to sanction the building of an office for the reception of the records and establishment of the Superintendent, for which purpose a sum of Rupees 1,800 would, I think, be sufficient : care should, however, be taken to place the building without the Cantonment limits, in order to avoid all chance of future interference on the part of the Military Authorities.

45. In determining where to commence operations, the chief considerations are connected with the facilitation of the Survey of the whole Collectorate, and the particular Districts in which a revision of Assessment is most urgently required. Both of these objects will be best subserved, in my opinion, by surveying, in the first instance, the Talooks along the Taptee River. These are, I think, the most highly assessed, and they are also by far the most fertile and valuable in the Collectorate. They have vast capabilities for the production of Cotton, and most of the other valuable exports of Khandesh; but the development of these capabilities is now greatly hindered by the high rates of Assessment with which the land is burthened. The following Table shows the several rates of Assessment for dry crop and irrigated land obtaining in the several Talooks of Khandesh. The first nine Talooks are those along the Taptee River :—

Name of Talook.	Dry Crop Land.								Irrigated Land.													
	Rates per Beegha range from						Avarage rate per Beegha on cultivation of 1850-51.		Mothusthul. Rates per Beegha range from						Pathusthul. Rates per Beegha range from						Average rates per Beegha on cultivation of 1850-51.	
	Rs.	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*
1. Sowda	2	6	9	to 0	7	6	1	14	11	3	8	0	to 2	8	0	3	0	0	to 3	0	0	3	4	1
2. Yawul	2	8	0	0	4	0	1	7	3	3	13	3	3	13	3	3	13	3	3	13	3	3	12	1
3. Chopra	2	9	0	0	8	0	1	15	0	4	0	0	2	14	3	....			....			3	11	4
4. Thalneir	2	10	0	0	8	0	1	10	3	4	2	0	2	10	0	....			....			3	7	8
5. Sooltanpoor	2	10	0	0	8	0	1	15	0	3	2	0	2	15	3	6	0	0	3	9	6	5	14	8
6. Nusseerabad	2	6	9	0	7	6	1	8	11	2	14	3	2	14	3	....			....			2	12	5
7. Errundole	2	0	0	0	3	9	1	4	4	3	2	0	2	14	3	....			....			2	13	10
8. Amulneir	2	2	0	0	7	6	1	4	1	4	2	0	2	14	3	6	12	0	5	0	0	4	2	3
9. Nundoorbar	2	1	0	0	8	0	1	9	1	3	2	0	2	14	3	5	0	0	2	6	9	3	1	7
10. Jamneir	2	6	9	0	7	6	0	13	0	2	14	3	2	14	3	....			....			2	13	8
11. Burgaon	2	6	0	0	7	6	0	13	6	3	0	0	2	6	9	5	10	0	3	13	3	3	3	4
12. Chaleesgaon	2	0	0	0	3	9	0	10	5	3	0	0	2	14	3	5	10	0	5	10	0	3	5	6
13. Dhoolia	1	7	0	0	3	9	0	10	5	3	0	0	0	3	9	10	0	0	0	3	9	4	4	1
14. Malligaon	2	0	0	0	3	9	0	7	11	13	12	0	2	6	9	15	0	0	2	8	0	6	6	10
15. Pimpulneir	1	7	0	0	3	9	0	15	7	5	0	0	2	8	0	13	12	0	1	15	0	8	2	3
16. Baglan	1	8	0	0	3	9	0	9	2	5	0	0	2	8	0	15	0	0	0	11	6	8	10	2

46. The first five Talooks entered in this statement are those along the north bank of the Taptee, and it will be found that both the dry crop and mothusthul rates are heavier in these than in the Talooks on the opposite or south bank of the river, which are the next four. And this is not, I think, completely met by compensating superiority of soil. The soil is certainly very fine in Sowda and Yawul, but it is, perhaps, not less so in Nusseerabad. It is in Chopra, however, that the rates bear most severely. The soil of Chopra is decidedly inferior to the rich blacks of Sowda, Yawul, and Nusseerabad, and a great deal of it very much inferior. Notwithstanding this, the average rate on the dry crop land in cultivation is the heaviest of all. The mothusthul rates are equally oppressive, owing to the great depth of the wells in the Chopra Talook, usually from 40 to 60 feet. Under a well-regulated Assessment, the mothusthul rates of Chopra should probably be the lightest, on an average, of any Talook in the Collectorate, whereas they are almost the heaviest. The rates in Sooltanpoor appear also very heavy, but as I did not visit the latter District I do not feel so satisfied of the fact as in the case of Chopra. The complaints in the latter Talook of the Assessment are loud and general. The Ryuts are ready and anxious to extend their cultivation, but dare not do so with their present rates. They are obliged to limit the extent of their farms as much as possible, and cultivate them highly, in order to be able to pay the existing Assessment. A reduction would, I am satisfied, cause an immediate and great extension of cultivation in all the villages of the Talooks along the Taptee where there is waste to break up. In a good many villages of Sowda and Yawul there is no waste, but any surplus capital accumulated there, through lowering the Assessment, would soon find its way elsewhere.

47. I would recommend, then, that the Survey operations be commenced simultaneously in the Sowda, Yawul, and Chopra Talooks at the opening of next fair season, and prosecuted there until the increasing heat makes it desirable to move the establishments westwards, when they might commence operations in Sooltanpoor and Nundoorbar. Owing to the land in many of the villages in Sowda and Yawul being entirely cleared, there will be no serious obstacles to the Survey encountered there for some time after the commencement of operations. This will be a great advantage, as it will enable the Survey Officers and establishments to become familiar with the state of things in Khandesh before commencing the Survey of the more jungly parts of the Province. In Chopra, also, although there is a good deal of jungle there, the Superintendent will be able to select the best cultivated villages to begin with. I do not, however, by these observations desire to bind down the Superintendent to follow the course here indicated, should any other in his judgment be better calculated to facilitate the Survey, but rather make these suggestions with the view of assisting him to come to a decision.

48. The work of classification should be deferred until the opening of the following season in 1853, when the measurements will probably be sufficiently advanced to admit of a single classing establishment being set to work.

49. The introduction of the new Assessment should, in any opinion, follow as closely as possible the completion of the classification, while the Survey fields are still fresh in the recollection of the villagers. It would be desirable, also, if possible, to introduce the new rates into a few selected villages, at all events, if not into all that may be ready at the Jummabundy of 1853-54, in order to seize the earliest opportunity for exhibiting to the Ryuts the result of the Survey, and so induce them to co-operate heartily in speeding forward the work. This was done with much advantage in the case of thirty villages of the Hoobullee Talook of the Dharwar Collectorate, shortly after the commencement of the Survey of the Southern Mahratta Country, and materially facilitated the subsequent operations.

50. The Officers and measuring establishments to be transferred from the Ahmednuggur Survey Department for employment in Khandesh next season, should, if practicable, proceed to Malligaon early in September next, in order that sufficient time may be afforded for settling with the Collector and Mamlutdars all needful preliminaries for the commencement of the

Survey in the beginning of the following November; and I will endeavour to arrange with the Superintendent of the Ahmednuggur Survey for this being done, so as to secure the whole of next fine season for the prosecution of the Khandesh Survey, in event of Government deciding to undertake the work.

51. These are all the observations that occur to me to make at present regarding the projected Survey operations, but I avail myself of the present opportunity to submit a few observations bearing upon the Assessment of Khandesh, and its future prospects, as I may not have another opportunity for explaining my views.

52. I have already, in a previous part of this Report, (para. 30,) brought to notice the fact of five-sixths of the arable land of Khandesh lying waste. Nearly the whole of this is comparatively fertile, and suitable to the growth of exportable products, such as Cotton, Oil Seeds, &c. These staples are chiefly exported from Bombay to foreign markets, where the consumption is so great as to prevent prices being perceptibly affected by any increase of production capable of being effected in Khandesh. There is, therefore, no risk of glutting these markets, and so lowering prices by stimulating production in Khandesh. They possess capabilities of taking off all, and more than all, that Khandesh could procure, were even its five millions of waste acres brought under the plough. There is clearly, then, no danger, but on the contrary the greatest advantage to be anticipated from giving every encouragement to the extension of cultivation in Khandesh. The great obstacle is the want of population. The soil of Khandesh could easily subsist in comfort a population of two or three million souls, but the Province only contains 760,000. It is clearly, then, the policy of Government, even in a financial point of view, to promote a rapid increase of population. This may be done by placing the existing population in a position of greater comfort than at present, and by offering encouragement to the location of new settlers.

53. Both of these objects will be promoted by the imposition of a very moderate Assessment on the land at the new settlement. I should say it would be difficult to err on the side of liberality in a Province in the situation of Khandesh, for with its millions of waste acres, capable of raising exportable products, there is ample room for the Revenue to recover itself from any loss occasioned by lowering the rates of Assessment. Population is, perhaps, already becoming redundant in parts of the Deccan, and low rates in Khandesh would, probably, bring settlers from it, and from the Nizam's Districts, in considerable numbers. The Collectorate of Rutnagherry is oppressed by an over-numerous and starving, but highly-industrious, population, and could means be devised for systematically drafting off the excess to re-establish the deserted villages of Khandesh, Government might unhesitatingly venture to incur a considerable expenditure for this purpose in the prospect of a most ample return. The attempt would, no doubt, be attended by difficulties, but not such, I think, as are insuperable, and I throw out the suggestion as one which seems to me worthy of further examination.

54. The present dry-crop rates of Khandesh appear heavy, as compared with the Survey rates introduced into the Deccan and Southern Mahratta Country. The highest, as will be seen from the statement following my 45th paragraph, is Rupees 2-10-0 per beegha, equivalent to Rupees 3-8-0 per acre. This rate obtains in Thalneir and Sooltanpoor, while the average rate of Assessment on the whole land in cultivation in the Sowda, Chopra, and Sooltanpoor Talooks, is Rupees 1-15-0 per beegha, or Rupees 2-9-4 per acre. These rates could not be paid at all in the Deccan, but the superior fertility of the soil in Khandesh, and the ease with which its products can be converted into money, from nearly all being grown for export, as well the advantages enjoyed by the cultivator in being allowed the privilege of free grazing over the vast wastes of Khandesh, make them, in reality, far less onerous than would be supposed from simply comparing them with rates on dry-crop land elsewhere.

55. The cultivators of Khandesh are, from all I could see and learn of their condition, in much more easy circumstances than those of the Deccan. They possess numbers of cattle, which cost them positively nothing, owing to the abundant free pasturage. These provide more than sufficient bullocks for agricultural purposes, so that the cultivators have rarely occasion to purchase any, except for drawing the Mohot, which, in the case of the deep wells of the Taptee Talooks, requires stronger cattle than are bred in Khandesh. Light two-bullock carts are to be found in great numbers in almost every village of Khandesh, and almost every cultivator possesses one or more. In addition to these, the wealthier cultivators and the traders generally keep light pleasure carts, in which they drive to market, or wherever they have occasion to go ; and these little vehicles, drawn by fast-trotting bullocks, are met with in numbers on all the roads of Khandesh. The vast traffic passing through the Province to Bombay, has, since the improvement of the Tul and Chandore Ghauts, brought a great accession of employment to the population of Khandesh. Independent of agriculture, nearly all the carts used in bringing down Cotton and other produce from Berar and Khandesh to Bhewndy belong to Khandesh, and are mostly owned by cultivators there. As soon as the harvest is got in, many of the cultivators either start off for Khamgaon, in Berar, or look about at home for a fare to Bhewndy, from which they seldom return with their carts empty. A trip of this kind occupies them about six weeks, and they usually net from 20 to 25 Rupees, clear of all expenses, if they are at all fortunate. Some of them make two trips before the rains. They are fast appropriating the traffic of the Brinjarries, and will, doubtless, succeed in doing so to a much greater extent whenever the frightful and thoroughly-execrable road from the Tul Ghaut through the Conkan is superseded by such a road as has been made down the Ghaut itself—a measure which is urgently required for the accommodation of the vast and increasing traffic on the most important line of road in our Presidency, with the single exception of that by the Bore Ghaut. In proof of the comparative abundance of money in Khandesh, I may also instance the fact that all labour there, agricultural as well as other, is paid for in cash, whereas in the Deccan and Southern Mahratta Country agricultural labour is almost universally paid for in grain.

56. These facts account for the cultivators of Khandesh being able to pay higher rates than elsewhere. But while fully admitting this, I am satisfied that the present rates are much too high, and, for the reasons already given, I am of opinion that a very liberal reduction is required.

57. I am also of opinion, that with reference to existing rates, a more liberal reduction is required in the Mothusthul Assessment than even in the Dry-crop Assessment. In consequence of the ever-growing demand for Cotton and Oil Seeds for the Bombay market, the prices of these products have rather risen than fallen during the last ten or fifteen years, while the prices of the products of irrigated land, which are nearly all consumed in the interior, have been going down. The cultivation of dry crops does even now, and will hereafter, to a greater extent, under a more liberal Assessment, yield a larger return on the outlay than the cultivation of garden crops. Were it not for the Poppy cultivation, I am inclined to think that a great many of the deep wells in the Yawul and Chopra Talooks could no longer be profitably used. The fixed rate paid by Government for Opium gives the baghaet cultivators of these Talooks a certain advantage, and induces them to continue cultivating, but the rate is so low as barely to enable them to pay their Assessment. The addition to the Jerayet Assessment, on account of irrigation from wells, should be small, in my opinion, and especially when the wells are deep. There are numerous wells in all parts of Khandesh which are not now used, in consequence of the land being waste, or the cultivators preferring the cultivation of dry crops. In the case of wells not in use for the last few years previous to the Survey, I think that no extra Assessment beyond the dry-crop rate should be imposed at all. Whatever rate is imposed in consequence of well-irrigation, should, however, invariably be levied, whether the land is irrigated or not.

58. The present plan of only levying the garden-rate when the land is watered, prevents the cultivators using the water of their wells for the irrigation of dry crops in a season of deficient rain, which it is of much importance that they should be able to do in a climate subject to drought, like that of Khandesh. It further acts as a bonus for the production of Sugar-cane, Plantains, and valuable crops requiring much water, and so has a tendency to keep the extent of land under irrigation, and not the Baghaet Revenue, at a minimum.

59. The question of "Pathusthul" Assessment, or that of the land watered from the bundharas thrown across the rivers flowing from the Syhadree Range towards the Taptee, is more difficult. At present the rates are not always levied in exactly the same manner: in some cases the pathusthul rates are levied whenever the land is cultivated, whether it is irrigated or not. In others, and these are the majority, the pathusthul rates are only levied when the land is irrigated; any portion of the pathusthul land cultivated with dry crops, and not irrigated, paying only the jerayet-rate. The pathusthul rates are invariably of the same amount per beegha, and do not depend on the kind of crop grown. Originally, they did throughout Khandesh, but the crop, or "jinnuswur" rates, were abolished several years ago, and unvarying rates introduced throughout the Collectorate.

60. The wisdom of this change is, perhaps, still open to question, and, from what I learned during my stay in Khandesh, I should say that both the cultivators and the Native Revenue Officers are convinced that the "jinnuswur" rates were better adapted to the pathusthul irrigation, and fairer to all parties, than the fixed rates by which they have been supplanted. The old jinnuswur, or crop-rates, were excessively high, and a great reduction of Assessment was effected by the fixed rates, by which the pathusthul cultivators have greatly benefitted; but of course the amount of the rates has nothing to do with the merits of the two plans of Assessment. Crop-rates admit of regulation, as to amount, equally with any other rates.

61. The conditions characteristic of the pathusthul lands in Khandesh appear to be the following :—

1st, A limited supply of water, and a comparatively unlimited extent of land, capable, from its position, of being irrigated from the work.

2nd, In consequence of this circumstance, and of dry crops being allowed to be cultivated under the jinnuswur system, at a low, or at the ordinary jerayet rate, the extent of land assigned as "pathusthul" to each bundhara, and privileged to have the water of the "path," or irrigation canal, applied to it, is always much greater than the supply of water suffices to irrigate.

62. In introducing the fixed rates it was impossible, or, at all events, it was not attempted, to deprive any of the "pathusthul" land of the privilege of irrigation, and the fixed rates were accordingly applied to the whole of it. But the whole land could never be irrigated from the "path," except, perhaps, to the extent of an occasional watering, during the monsoon, while the river continued full, to the dry crops, which the jinnuswur system contemplated as being grown on a great portion of it. The immediate effect of the change, therefore, was to throw out of cultivation the land which used to be cultivated with dry crops, in the case of the pathusthul land made liable to the payment of the pathusthul rate whenever cultivated. The latter condition, however, was not generally carried into effect, and in most Districts pathusthul lands are allowed to be cultivated with dry crops at the jerayet rate, if no water is applied to them.

63. Another consequence followed the change; by making the rate the same for every kind of crop irrigated, and levying this rate only in the case of land *actually irrigated*, the most profitable mode of employing the water is in the irrigation of valuable crops, such as

Sugar-cane and Plantains, which yield a large return, compared with Wheat and Gram, with reference to the space they respectively cover. An acre of Sugar-cane requires at least as much water as five acres of Wheat, and the value of the produce in the former case is probably more than in the latter; but by the introduction of the fixed rate, the grower of Wheat would have to pay the pathusthul rate on five acres, whereas the grower of Sugar-cane, using quite as much water, would only pay the pathusthul rate on one acre. The fixed rate, then, acts as a bonus for the cultivation of valuable crops, which remain on the ground the whole twelve months, and, of course, require a great deal of water during so long a period; and, as might be expected under these circumstances, the fixed rates have occasioned a much larger proportion of the whole land irrigated to be cultivated with valuable crops than was the case under the old Jinnuswur Assessment.

64. Other important consequences flow from this, which have yet to be noticed. The water of the path, insufficient for the irrigation of the pathusthul land under the jinnuswur system, became still more insufficient under the fixed rates, which occasioned an extended cultivation of crops requiring much water. In Districts where the pathusthul rate is levied whenever the land is cultivated, as in the Talook of Amulneir, it became the practice for most cultivators to cultivate a portion only of their land each year, and leave the other portion waste. By this arrangement they pay nothing for the waste, and the land has the advantage of a fallow. In other Districts, where the jerayet rate is levied when dry crops are raised, instead of allowing the land to lie waste, the practice is to cultivate baghaet and dry crops in rotation. The tendency, then, of the fixed rate, levied, as at present, on the *actual extent of land* irrigated, is to restrict irrigation within the narrowest limits, and so to keep the Pathusthul Revenue at a minimum.

65. There is yet another and a graver objection than a financial one to which the fixed rate is liable. I have shown its effects in promoting an extended cultivation of valuable crops, requiring much water; but this cultivation is much more expensive, and requires a much larger outlay of capital in anticipation of the crop than that of Gram and Wheat. The former cultivation can only be undertaken to any extent by cultivators in easy circumstances, whereas the latter is more suitable to the poorer classes. In consequence of this, it was the wealthier cultivators alone who were able to take advantage of the fixed rate, and extend their cultivation of the valuable crops. The poorer cultivators had not the means of doing so, and as the fixed rate was often heavier than the rate on Gram and Wheat under the jinnuswur system, the change to them was a misfortune instead of a benefit. Under the new system, the better class of cultivators became wealthier than ever, and the poor poorer than before; and the hardship to the latter was aggravated by the wealthy and influential cultivators appropriating more and more of the water of the path to themselves, and so despoiling their poorer neighbours of their fair share. This was a direct and almost inevitable consequence of the fixed rate. The valuable crops yield the highest profit, and, consequently, the more water a substantial cultivator could appropriate, the more land he could devote to these crops. But as the total supply yielded by the path is limited, it is clear that if the wealthier cultivators take more water under the fixed rate than under the jinnuswur system, they must deprive some other parties of their accustomed portion, and in such a struggle we can have little doubt that the poorer go to the wall. In fact, many of them have been ruined and driven off the ground altogether, much to the satisfaction of those who remain, who are thus enabled to appropriate more water than ever. These remarks will probably suffice to show that it is the direct interest of the wealthy and influential pathusthul cultivators to prevent any *extension* of the land under irrigation.

66. All this consequence of the new system goes far to account for the failure of the anticipations of an extended cultivation and increased Revenue, from placing the bundharas in better repair, which I was given to understand by the Civil Engineer is a frequent and mortifying result of expenditure on bundharas by his department. The wealthy and

influential cultivators want more water to be able to enlarge their cultivation of the valuable crops, and they induce their poorer neighbours, by promises of all kinds, to engage to irrigate more land after the bundhara is repaired ; but when the work is done, and the additional supply of water is obtained, the object of the wealthier class would be defeated if their promises were to be fulfilled, and, accordingly, they do what they can to prevent any extension of irrigation, and so to appropriate the additional supply of water to themselves; they are generally successful. The poorer people represent to the Collector that they have not the means of fulfilling their engagements, and the matter after some time is left to take its course.

67. The distribution of the water to the several fields under irrigation is made by an Officer called a " Pathkurree," who is generally remunerated by a grant of land in Enam. He is supposed to distribute the water from one garden to another in succession, until the whole have had as much as they require, and then to begin again at the first, and go through the whole again in regular succession. In theory this is fair enough, but rule and practice widely differ. The Pathkurree, like the rest, regulates his division of the water from motives of self-interest. Influential Deshmooks, Patels, Sowkars, and the wealthy cultivators, generally make kind friends but troublesome enemies, and we need not wonder if the poor "Pathkurree" finds that both his pocket and his comfort are advantaged by keeping on good terms with them. The "path," somehow or other, runs oftener and runs longer into their gardens than into others ; and when set on for the night (it flows, of course, constantly) to irrigate a poor man's garden, and he finds in the morning that only half the ground he expected has been watered, the " Pathkurree," of course, knows nothing of the stream having been cut off and turned into a rich man's garden higher up, for half the night, and out of turn.

68. Such are the facts connected with and tendencies of the present mode of assessing the pathusthul lands of Khandesh, as far as I could ascertain them during my short tour in the Province. The system is a good one for a limited class of influential cultivators, but a bad one for their poorer neighbours, and for the Government Revenue. It would require to be thoroughly examined in the course of the Survey operations, with a view to improve it, or to introduce some other system in its place, but, with my limited knowledge of it, I shall not venture to do more than throw out a few suggestions for future consideration.

69. It will be readily admitted that neither the jinnuswur nor any other plan of Assessment and management could prevent the richer cultivators taking more than their fair share of the water. While human nature continues what it is they will do so in defiance of all the regulations we can make to prevent them. The "jinnuswur" system did not attempt to enforce impracticable rules connected with the division of the water, but it aimed at making a man pay in proportion to the quantity of water he abstracted from the general supply obtained from the bundhara.

70. The higher Assessment on irrigated land in this country always admits of being resolved into two parts : one, the Assessment of the land apart from the irrigation, or the ordinary dry-crop rate ; the other, the addition to this Assessment due to the irrigation, or the water-rent or tax. In fixing a Pathusthul Assessment, then, the real question is, how to adjust the water-tax, the dry-crop portion of the Assessment being already known? Let us suppose, for example, that the wish of the Assessor is to realize, one year with another, a water-tax of 1,000 rupees extra to the Jerayet Assessment from the land recorded as pathusthul under a particular bundhara. The question is, how is this to be done ?

71. The jinnuswur system endeavoured to accomplish this by fixing different rates of Assessment on the several kinds of crops, according to the quantity of water required for the irrigation of each. Sugar-cane thus was assessed, perhaps, half as high again as Plantains, and four or five times as high as Wheat. Thus, when a cultivator increased his crop of Sugar-

cane, and so required a larger supply of water for its irrigation than before, he had to pay a heavier Assessment. He could only obtain this additional supply by depriving some one else of it, or by growing himself a larger extent of the lowly-assessed crops, which require little water, than he did before. In the latter case, the additional Assessment charged on his Sugar-cane was compensated by the larger extent of land held at lower rates than the preceding year: the tax on his whole holding remained much the same. In the former case, too, though his whole tax would be higher, some other person's would be lower, and this compensating process will be found to attend the system in all its applications. If the pathusthul cultivators generally took to extending their cultivation of the valuable crops, the failure of an adequate supply of water would require them to replace their Wheat and Gram by Jowarree, Bajree, and other crops requiring no irrigation at all. The additional Revenue gained on the Sugar-cane would be lost on the Wheat and Gram; and so the whole plot of pathusthul land might yield about the same water-tax extra to the Jerayet Assessment, if the rates upon each crop were correctly fixed under all the variations in the relative extent of the several crops from year to year.

72. The jinnuswur system, then, scientifically considered, seems to meet the requirements noted above almost exactly, and to be nearly perfect. The practical objections to which it seems liable are the following: The different rates for the different crops require an annual measurement, or at least inspection, of the pathusthul lands twice a year, once after the monsoon crops are all in the ground, and again after the monsoon, when the cold weather crops are coming on. If each crop were measured in detail, the process would be troublesome; and there would be a strong temptation to bribery, for the purpose of inducing the measurer to under-estimate the extent of land cultivated with high-rated crops, and over-estimate the low-rated crops; still, if actual measurement were resorted to, it would be possible to check this practice by severely punishing every instance of mismeasurement brought to light, and in case of suspicion, detection would, of course, be easy. A cultivator, however, under the jinnuswur system, would never know exactly beforehand what his Assessment would amount to, and this might possibly lead to over-exaction on the part of the Coolcurnees.

73. These objections are not without force, and it would be very desirable if some system could be hit upon which would be free from them, and combine the simplicity and certainty of a fixed rate with the advantages of the jinnuswur system. I am not sanguine, however, as to success in this endeavour, and have no hesitation in expressing my decided preference for jinnuswur rates over fixed rates, levied as at present, in the circumstances of the pathusthul lands of Khandesh. It is to be borne in mind, that the area now recorded as pathusthul, and entitled to water from the path, is greater than can be cultivated with garden crops. It will probably, therefore, be found necessary under the Survey Assessment, if fixed independently on each garden, to levy it only on such portions of it as may be cultivated with garden crops, and allow the cultivators the privilege of giving an occasional watering to ordinary dry crops, such as Jowarree and Bajree, without subjecting themselves to the full garden-rate. This privilege would be important to the cultivators, when the rains do not fall seasonably, and the plentiful supply of water obtainable from the paths in the monsoon months would enable them to do so to a considerable extent without interfering with the irrigation of the garden crops.

74. Similar views to those I have here expressed regarding the working of the fixed rates on the pathusthul of Khandesh, introduced in supersession of the "Jinnuswur" Assessment, were embodied by Captain Hart, of the Engineers, in a Memoir which he drew up some years ago, on leaving the Province, after having been employed for several years there as Civil Engineer, and taken great interest in the improvement and extension of the bundhara system of irrigation. Captain Hart sent me this Memoir at the time for my opinion, but I was not convinced by its perusal of the accuracy of his views, and thought that a properly-

regulated fixed Assessment would be undoubtedly preferable to the "jinnuswur." I have not, therefore, entered on the examination of the subject with any preconceived bias in favour of the "jinnuswur" system, but rather the contrary; and I do not think that anything short of an opportunity of satisfying msyelf, by personal inquiries of the cultivators and others on the spot, would have satisfied me of the superiority of the "jinnuswur" system over that which superseded it. I do not know whether Captain Hart ever made any public use of his Memoir, but I am glad to claim the support of so keen an observer, who had a long acquaintance with the system, in confirmation of conclusions which I am also aware to be at variance with those of many able Revenue Officers who have served in Khandesh.

75. I do not venture to recommend any particular mode of Assessment for the pathusthul lands to be adopted at the Survey, as it would be presumptuous in me to do so, without a far more complete acquaintance with the subject than I have been able to acquire in the course of a few weeks' visit to the Province; but I hope, at the same time, that the remarks I have made will not be without their use, as they may serve to point out to the Superintendent the chief objections to which the existing mode of Assessment is liable, and the conditions requiring to be provided for in devising a better.

76. The vast waste lands of Khandesh yield at present no direct Revenue to Government, except a tax called Wun—charge paid by Brinjarries and other strangers who bring bullocks to graze there during the monsoon months, and a sheep-tax, levied from migratory shepherds. All the permanent residents of Khandesh, whether cultivators or not, are allowed to send out their cattle to graze over the waste whenever they please, and they pay nothing for the privilege.

77. It will be matter for consideration at the Survey, whether a Revenue should for the future be drawn from the arable waste or not. The privilege of free grazing has, without doubt, greatly encouraged the breeding of cattle in Khandesh, and an abundant supply of cattle is indispensable to any great extension of cultivation there under the Survey settlement. I am inclined to think that the largest Revenue would, in the end, be secured by trusting solely to an extension of cultivation for its increase, rather than in any degree to the taxation of the waste. The grazing, however, of so much of the latter as may be divided into fields at the Survey, might, unobjectionably, be sold under the Joint Report Rules, after the new settlement is introduced; but I do not feel satisfied that any advantage would result from abolishing the privilege of free grazing in the case of the undivided waste.

I have the honor to be, &c.,

(Signed) G. WINGATE,

Survey Commissioner.

Poona Districts, Camp Karlee, 29th March 1852.

No. 3192 of 1852.

Territorial Department,

Revenue.

Resolution passed by Government, under date 7th May 1852, *on a Letter from Captain G. Wingate, Survey Commissioner, No.* 97, *dated 29th March* 1852, *reporting on the Plan of Survey and Assessment most suitable for the Collectorate of Khandesh.*

1. This Paper contains a clear description of the present condition of Khandesh, both as regards the difficulties to be encountered in undertaking a Revenue Survey there, and the great advantages that may be anticipated from the operation.

2. The manner in which the difficulties in question are proposed to be met, seems to be the most suitable that could be devised.

3. It would clearly involve Government in insuperable difficulties to attempt to complete the field Survey of a Province so thinly populated, and where the extent of unoccupied jungle-land is so very great as in Khandesh; and the proposed plan, whilst restricting the field Survey sufficiently to admit of its being accomplished, provides for the whole land coming under the operation of a revised Assessment.

4. By these means every advantage that seems capable of attainment in the present condition of Khandesh will be secured, and on the termination of the thirty years for which the Survey settlements are guaranteed to the people, the detailed field Survey could be further extended, in proportion to the advance made in the appropriation of the waste lands during the interim. No portion of the proposed operations will be rendered useless by the changes occasioned by an increasing population and extension of cultivation.

5. Under the arrangement proposed in Captain Wingate's Report of 5th November 1851, No. 408, and approved of by Government,* the Ahmednuggur Department may gradually be moved into Khandesh; and the transfer of a classing establishment for a time to the Southern Mahratta Country, until the measurements of Khandesh are sufficiently advanced to admit of a classification being prosecuted there, may be authorized.

6. Captain Wingate's Report contains suggestions regarding the Assessment of Khandesh which should be duly weighed by the Superintendent, who may be entrusted with the Survey there, in making his proposals for the revised Assessment.

7. The partial failure which has resulted from the abolition of the "Peerewar Pathusthul" Assessment in Khandesh, is clearly exposed by Captain Wingate. The Revenue Secretary, who was employed in Districts of the Nassick Sub-Collectorate adjoining Khandesh, informs the President in Council that he suggested at the time to Mr. Dallas, the Settling Officer, and the then Revenue Commissioner (Mr. Vibart), the probability of the [redacted] occurrence

* See Government Letters to Revenue Commissioners, Northern and Southern Divisions, dated 20th November 1851, No. 10907 and 10914, and also correspondence with Government of India, ending for time with letter written consequent on the proceedings of Government on Captain Wingate's Report, No. 92, of 24th ultimo.

of the consequences which have resulted. The Revenue Commissioner, Survey Commissioner, and Collector, should refer to the correspondence which passed between them and Government at the time, and ascertain how far the objections taken to the arrangements were officially considered and discussed previous to or at the time of their introduction.

8. The possibility of the cultivation of Opium being discouraged by existing rates being continued on land producing the Poppy, should be considered by the Superintendent and Collector when introducing the revised Assessment for lands producing other crops.

9. The suggestion in para. 53 of Captain Wingate's Report, that the excess of population in Rutnagheree might be made available for supplying the defect in Khandesh, derives additional force from the description given in his Report dated 30th January 1851, No. 44, on the Rutnagheree Collectorate, of the present depressed circumstances of the redundant population there. Among the causes which have led to the impoverishment of the people, he enumerates one which requires to be considered in the Military Department. Government here refer to the present system by which, as they understand from Captain Wingate, Recruits for the Bombay Army are drawn to a far less extent than formerly from the Bombay territories.

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11. But to return to the specific proposition for colonizing Khandesh. The fact of Emigrants from Bombay being obtainable for the Mauritius, seems to prove that the inhabitants of Districts where the population is in excess have no insuperable objections to moving elsewhere. Mr. Elphinston, the present Collector of Khandesh, has been employed also in the Southern Concan, and Mr. Coles, the Collector of Rutnagheree, is well acquainted with both Provinces. They might, in communication with each other, endeavour to devise the means of giving practical effect to Captain Wingate's suggestions.

12. To Captain Wingate the best thanks of Government are due for his exertions in furtherance of the objects for which, at his own suggestion, he was deputed to Khandesh, and for the valuable Paper in which the results of his investigations are placed before the President in Council.

(Signed) H. E. GOLDSMID,
Secretary to Government.

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ERRATA.

Page 2, line 6, *for* "in" *read* "on"
„ 4, „ 6 of Statement, *for* "3·04" *read* "3·4"
„ „ „ 8 „ „ *for* "0·02" *read* "2·"
„ „ „ 16 „ „ *for* "39026" *read* "59026"
„ 5, col. 3 of Statement, *for* "sides" *read* "sites"
„ „ line 9 below Statement, between "uninhabited" and "of" *insert* "villages,"
„ 6, „ 31, *for* "spare" *read* "sparse"
„ 11, „ 6 of Statement, *for* "1-8-11" *read* "1-8-10"
„ 12, „ 12, after "The rates in" *insert* "Thalnair and"
„ „ „ 38, *for* "any" *read* "my"
„ 16, „ 34, *for* "poor" *read* "poorer,"
„ 20, last line above foot note, after "probability of the" *omit* "probable"
„ 21, line 2, after "and" *insert* "with"

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